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connection. Pogo pin connectors are manufactured by Pogo Instruments, Inc., Kansas City, Kans. The spring loaded electrical connectors **104** can also comprise wires, pins or cables formed as spring segments or other resilient members.

In this embodiment the spring loaded electrical connectors **104** electrically contact pads **35W** formed on the interconnect **10W**. This arrangement provides separate electrical paths from the testing circuitry **98**, through the spring loaded electrical connectors **104**, through the pads **35W**, through the conductive vias **32W** and through the contacts **14W** to the bumped contacts **16**. During a test procedure, test signals can be applied to the integrated circuits on the wafer **102** using these separate electrical paths.

In addition to establishing electrical communication with the interconnect **10W**, the spring loaded electrical connectors **104** also provide a mechanical force necessary for biasing the interconnect **10W** against the wafer **102**. Further details of a wafer level system similar to the system **100W** are contained in U.S. patent application Ser. No. 08/797,719, filed Feb. 10, 1997, entitled "PROBE CARD FOR SEMICONDUCTOR WAFERS AND METHOD AND SYSTEM FOR TESTING WAFERS" which is incorporated herein by reference.

Thus the invention provides an improved test interconnect for testing semiconductor components having bumped contacts. The interconnect include contacts designed to provide a reliable electrical connection to the bumped contacts with a minimal application of contact force. In addition, the contacts are constructed to move in the z-direction to accommodate variations in the size or planarity of the bumped contacts and to twist relative to the bumped contacts to penetrate oxide layers thereon.

While the invention has been described with reference to certain preferred embodiments, as will be apparent to those skilled in the art, certain changes and modifications can be made without departing from the scope of the invention as defined by the following claims.

What is claimed is:

1. A contact for making an electrical connection with a component contact on a semiconductor component comprising:

- a substrate having a recess sized and shaped to center and retain the component contact;
- a plurality of cantilevered leads on the recess;
- a support member attached to the leads for movement into the recess, the support member configured to support and electrically engage the component contact during the movement into the recess; and

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a projection on the support member.

2. The contact of claim 1 wherein the recess has a depth approximately equal to a height of the component contact and the movement into the recess can be by an amount approximately equal to the depth.

3. The contact of claim 1 wherein the leads are configured to exert a torque on the support member and to twist the projection into the component contact during the movement.

4. The contact of claim 1 wherein the projection comprises a peripheral blade configured to penetrate the component contact.

5. The contact of claim 1 wherein the component contact comprises a bumped contact having a diameter approximately equal to that of the recess.

6. The contact of claim 1 further comprising a conductive via in the substrate in electrical communication with each lead.

7. The contact of claim 1 wherein the leads have scallops and an extensible configuration.

8. The contact of claim 1 wherein the substrate comprises a semiconductor material.

9. The contact of claim 1 wherein the support member comprises a plate.

10. A contact for making an electrical connection with a component contact on a semiconductor component comprising:

a substrate having a recess sized and shaped to center and retain the component contact;

a plurality of extensible cantilevered leads on the recess;

a support member attached to the leads for movement into the recess, the support member configured to support and electrically engage the component contact during the movement into the recess; and

a projection on the support member;

the leads configured to exert a torque on the support member and to twist the projection into the component contact during the movement.

11. The contact of claim 10 wherein the leads include scallops.

12. The contact of claim 10 wherein each lead is in electrical communication with a conductive via in the substrate.

13. The contact of claim 10 wherein the projection comprises a peripheral blade.

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